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Research and Sponsored Programs Office (RSPO)

Sponsored Research Annual Reports

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2011

# Sponsored Programs Research / Fiscal Year Annual Report 2011

Monterey, California: Naval Postgraduate School.

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# SPONSORED PROGRAMS RESEARCH

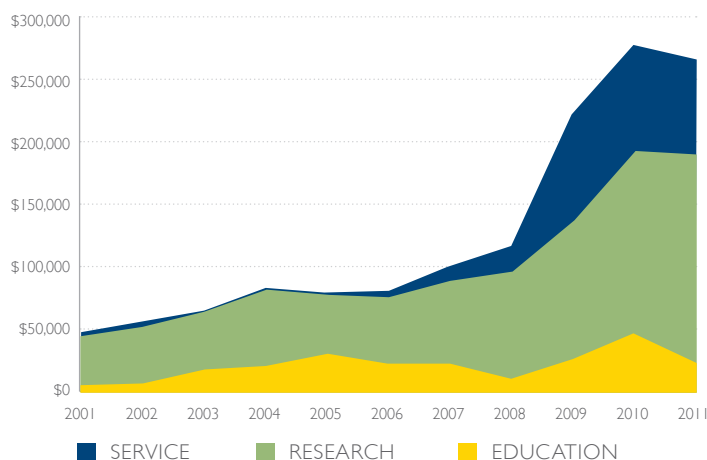
## FISCAL YEAR ANNUAL REPORT 2011



### PROGRAM OVERVIEW

The Naval Postgraduate School (NPS) has a strong sponsored program that has grown steadily to provide the faculty and staff required for a strong, viable graduate school. In FY10, NPS had available over \$270.5M in sponsored program funding. Total expenditures in FY11 exceeded \$185.3M.

### SPONSORED PROGRAM PROFILE FY 2001-2011 (FUNDS RECEIVED)



Sponsored programs (research, education, and services) are integral to the Naval Postgraduate School mission. The research program supports graduate education by providing militarily relevant thesis topics that address issues from the current needs of the Fleet and Joint Forces to the science and technology required to sustain long-term superiority of the Navy/DoD. Research varies from the very fundamental to the very applied, at all levels of classification. Sponsored research includes:

- Basic and Applied Research
- Individual and Interdisciplinary Group Projects
- Fleet Support
- Cooperative Research and Development Agreements

Integrated graduate education and research in space systems, total-ship systems engineering, combat systems, systems engineering and homeland security and defense, supplemented by off-campus graduate and certificate programs and short courses, are a few offerings of the sponsored education program.

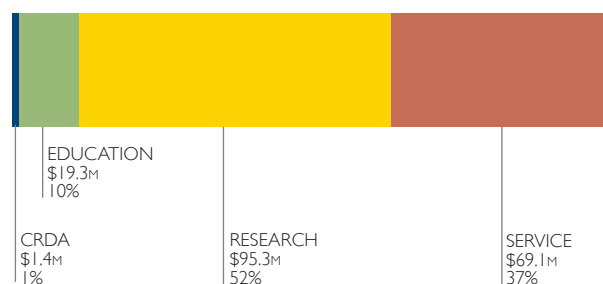
Service includes "work for others" and NPS management of DoD programs, e.g., the Science, Mathematics and Research for Transformation (SMART) Scholarship-for-Service Program sponsored by OSD.

### SPONSORED PROGRAM EXPENDITURES

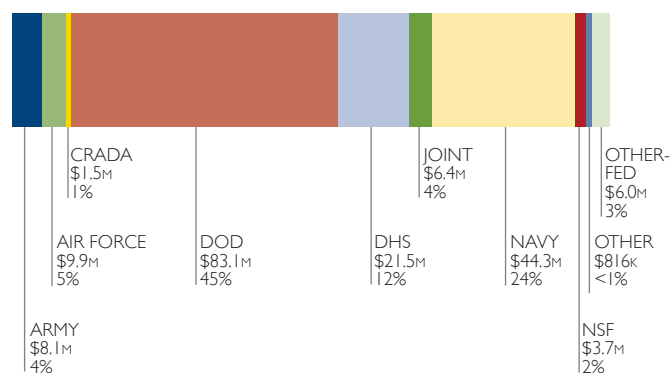
1 October 2010–30 September 2011

Total Expenditures: \$185.3M

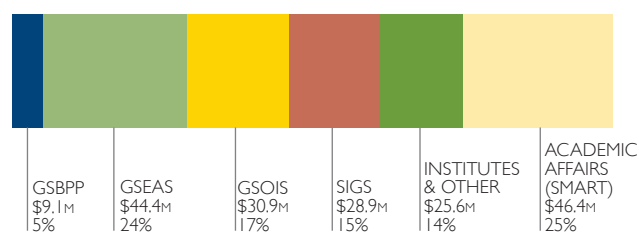
#### BY TYPE OF ACTIVITY.....



#### BY SPONSOR .....



#### BY NPS ORGANIZATION .....



## SCHOOL OF INTERNATIONAL GRADUATE STUDIES

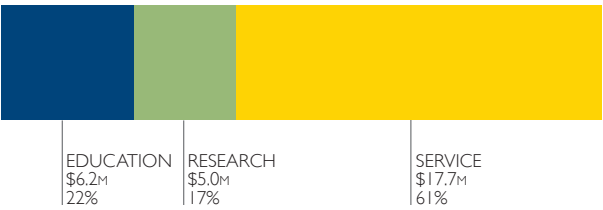
The School of International Graduate Studies (SIGS) specializes in research and graduate education focused on security studies, international relations, regional security and area studies, international political economy, and U.S. security policy. Programs identify and address security challenges, develop civilian and military inter-agency alliances, and strengthen multilateral and bilateral defense cooperation between the U.S. and other nations. SIGS components include the department of National Security Affairs, Defense Resources Management Institute, and Center for Civil-Military Relations. Statistics shown are for National Security Affairs only, which includes the Center for Homeland Defense and Security.

TOTAL EXPENDITURES: \$28.9M

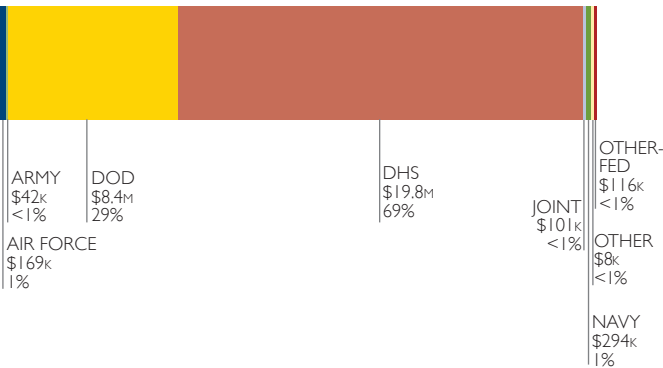
### BY DEPARTMENT



### BY TYPE OF ACTIVITY



### BY SPONSOR

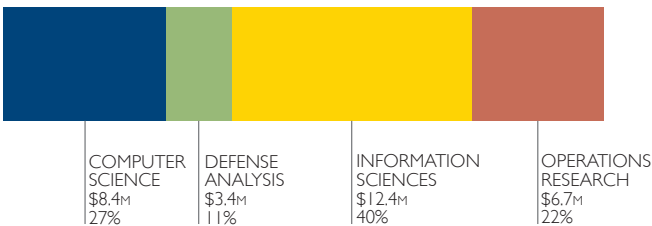


## GRADUATE SCHOOL OF OPERATIONAL AND INFORMATION SCIENCES

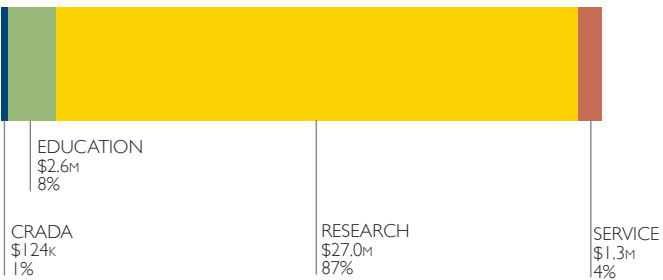
GSOIS resident programs consist of sixteen technical curricula and award master of science and Ph.D. degrees across four academic departments. Responding to the needs of naval and military customers, graduate education and research are focused in six military important domains: information science and technology; computer science; operations analysis and operational logistics; human-systems integration; systemsengineering analysis; and special operations and related defense analyses. The emphasis of sponsored research and studies activities is on the development, integration, and application of mathematical, scientific, and technical skills that contribute to advances and improvement in military systems and operations, and related areas of national defense and security.

TOTAL EXPENDITURES: \$30.9M

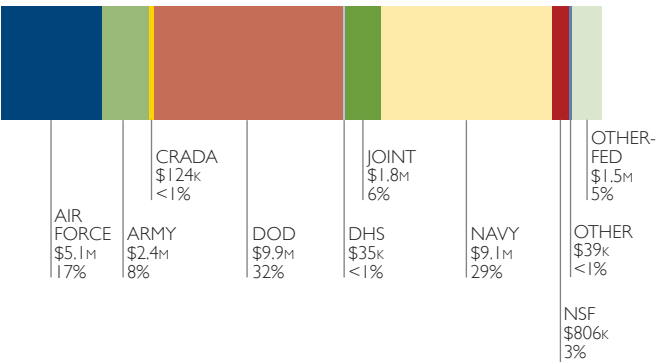
### BY DEPARTMENT



### BY TYPE OF ACTIVITY



### BY SPONSOR

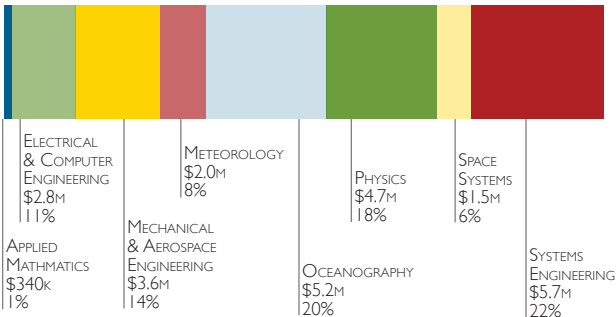


## GRADUATE SCHOOL OF ENGINEERING AND APPLIED SCIENCES

GSEAS education leads to the master of science, engineer, and doctor of philosophy degrees and contains seven technical academic departments (applied math, electrical and computer engineering, mechanical and aerospace engineering, meteorology, physics, oceanography, systems engineering) and two interdisciplinary academic groups (space systems and undersea warfare). These entities offer degree programs tailored to the Navy and defense community, while providing technical foundations for student theses and interdisciplinary faculty and student projects. Research centers and unique laboratory facilities (e.g., unmanned and autonomous vehicles, robotics, free-electron lasers, spacecraft research and design, remote sensing, rockets and combustion, signal enhancement, ocean acoustics, interactive digital environment analysis, secure space-systems research, secure computer networks, materials research, cyber warfare and directed energy) add rigor to the resident academic and sponsored programs.

TOTAL EXPENDITURES: \$44.4M

### BY DEPARTMENT .....



## GRADUATE SCHOOL OF BUSINESS AND PUBLIC POLICY

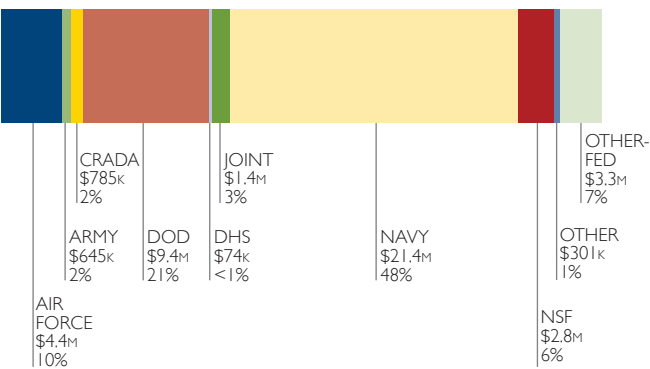
The Graduate School of Business and Public Policy (GSBPP) offers unique residential defense-focused MBA and Master of Science in Management programs, plus master's degrees in four other DoD-relevant areas. Faculty research is an important component of the school and strives to support military decision making, problem solving, and policy setting; improve administrative processes and organizational effectiveness; contribute knowledge to academic disciplines; and advance the mission of graduate education. The research program is integrated to the greatest possible extent with the educational process. Students are encouraged to participate in faculty projects, and faculty research results are typically incorporated in classroom instruction. Topics and issues can be grouped into five broad functional areas: acquisition and contracting; budgeting and financial management; logistics and transportation; manpower-systems analysis; and policy formulation, analysis, and management.

TOTAL EXPENDITURES: \$9.1M

### BY TYPE OF ACTIVITY.....



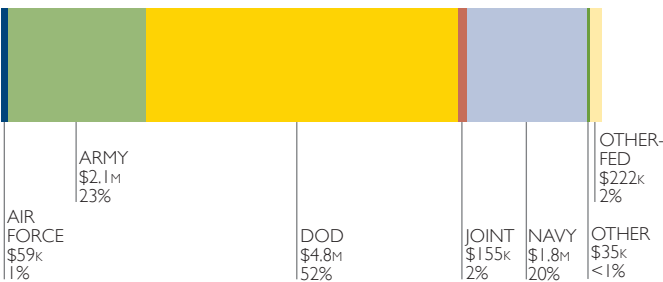
### BY SPONSOR .....



### BY TYPE OF ACTIVITY.....



### BY SPONSOR .....





## RESEARCH AND EDUCATION INSTITUTES AND CENTERS

NPS's research and education institutes apply interdisciplinary research to military challenges, offering or facilitating degree programs, executive and continuing education, student contact with senior naval leadership, and student and faculty research from basic to applied. Research centers emphasize practical application.

The Wayne E. Meyer Institute of Systems Engineering supports projects in warfare systems and technology research, including littoral undersea warfare, port security, ship-based ABM, littoral oceanography, unmanned-system attrition models, deployable joint C&C, naval architecture, risk-informed decision making, ordnance impact-burial prediction, Chinese oceanography, condensed-matter nuclear science, and energy-management systems.

The Cebrowski Institute is a hub of innovation for the information revolution in military and security affairs for the Navy, DoD and nation. CI helps generate ideas for information strategy and tactics and supports the information entrepreneurs who champion these ideas, promoting them in the Navy and DOD and working with leaders and networks to bring them into practice.

The MOVES Institute investigates modeling, virtual environments, and simulation, with projects in 3D visual simulation, networked VE, computer-generated autonomy, computational cognition, human-performance engineering, immersive technologies, gamebased simulation, combat modeling and analysis, and medical modeling and simulation.

The National Security Institute (NSI) is a partnership of NPS, University of California, Santa Barbara, and Lawrence Livermore National Laboratory. Recognizing that future research and development will require the combined expertise of academia, national laboratories, and private enterprise, NSI teams top scientists and institutions in joint service to national, homeland, and global security goals, and engages graduate students in related R&D, field experimentation, and interdisciplinary exploration.

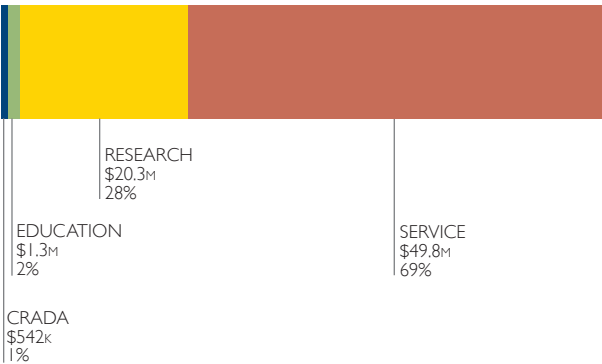
The Center for Interdisciplinary Remotely Piloted Aircraft Studies (CIRPAS) provides manned aircraft, remotely piloted aircraft and ground based radars for scientific research, especially atmospheric and oceanographic observation, payload integration, CONOPS development, flight-safety reviews, logistics, and flight support.

The USSOCOM-NPS Field Experimentation Cooperative explores SOF solutions for capability gaps, provides a venue to assess, develop, counter, and exploit emerging capabilities, and examines dual capabilities for homeland security, stabilization, reconstruction, and disaster/humanitarian assistance.

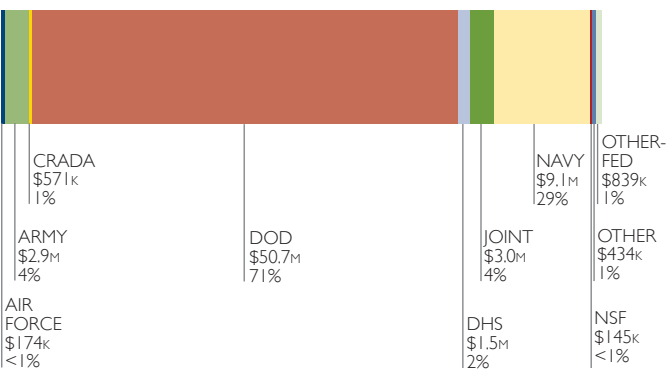
The SMART Scholarship-for-Service Program brings highly skilled technical labor into DoD facilities and agencies and enhances the expertise of the existing workforce. SMART offers scholarships to undergraduate, master's, and doctoral students with demonstrated ability and special aptitude.

TOTAL EXPENDITURES: \$71.9M

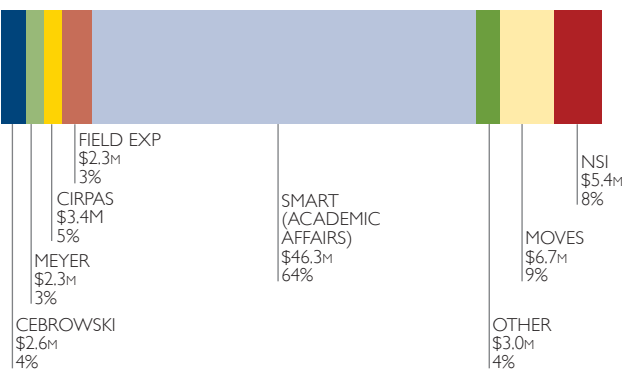
### BY TYPE OF ACTIVITY.....



### BY SPONSOR .....



### BY INSTITUTE/CENTER .....



## ADDITIONAL RESEARCH FACTS IN FY11

Twelve new Cooperative Research and Development Agreements (CRADAs) or Limited-Purpose CRADAs were executed. Partners were Imsar, LLC; TBDC Tireballs, LLC; DRS Tactical Systems, Inc.; Solar Stik, Inc.; Rajant, Inc.; Y-Carbon; Battelle Memorial Institute; Oxnard Harbor District, Port of Hueneme; Polystor Energy Coporation; University of Maryland; University Corporation for Atmospheric Research; University of Texas at Austin

- 1,210 degrees were conferred, including:
- 29 Advanced Degrees (Ph.D., Engineer)
  - 666 Masters of Science
  - 108 Masters of Business Administration
  - 249 Masters of Arts
- Three Space and Naval Warfare Systems Center Fellowships were awarded to NPS students.
  - Twenty-two National Research Council Research Associates were on tenure at NPS.
  - Six visiting faculty members from the Engineer and Scientist Exchange program were hosted.
  - Four patents were issued, nineteen patent applications were filed.